# Appendix **M** Biological Resources

M1: USFWS Species List

M2: Biological Opinion & Biological Opinion Amendment

M3: Informal Section 7 Consultation

Note: *National Marine Fisheries Service (NMFS) Endangered and Threatened Marine Species list is not included because the project is outside NMFS jurisdiction.*

# M1: USFWS Species List

**IPaC** **U.S. Fish & Wildlife Service**

# IPaC resource list

## Location

Los Angeles and San Bernardino counties, California


## Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/



# Endangered species

**This resource list is for informational purposes only and should not be used for planning or analyzing project level impacts.**

Section 7 of the Endangered Species Act **requires** Federal agencies to *"request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action"* for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Review section in IPaC or from the local field office directly.**

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by creating a project and making a request from the Regulatory Review section.

Listed species[1] are managed by the Endangered Species Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

## Birds

| NAME | STATUS |
|---|---|
| Coastal California Gnatcatcher *Polioptila californica californica*<br>There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat.<br>http://ecos.fws.gov/ecp/species/8178 | Threatened |

Least Bell's Vireo Vireo bellii pusillus — Endangered
There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat.
http://ecos.fws.gov/ecp/species/5945

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered
There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat.
http://ecos.fws.gov/ecp/species/6749

## Fishes

| NAME | STATUS |
|---|---|
| Santa Ana Sucker Catostomus santaanae<br>There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat.<br>http://ecos.fws.gov/ecp/species/3785 | Threatened |

## Flowering Plants

| NAME | STATUS |
|---|---|
| Gambel's Watercress Rorippa gambellii<br>**No critical habitat** has been designated for this species.<br>http://ecos.fws.gov/ecp/species/4201 | Endangered |
| Nevin's Barberry Berberis nevinii<br>There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat.<br>http://ecos.fws.gov/ecp/species/8025 | Endangered |
| San Diego Ambrosia Ambrosia pumila<br>There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat.<br>http://ecos.fws.gov/ecp/species/8287 | Endangered |
| Santa Ana River Woolly-star Eriastrum densifolium ssp. sanctorum<br>**No critical habitat** has been designated for this species.<br>http://ecos.fws.gov/ecp/species/6575 | Endangered |
| Slender-horned Spineflower Dodecahema leptoceras<br>**No critical habitat** has been designated for this species.<br>http://ecos.fws.gov/ecp/species/4007 | Endangered |

## Insects

| NAME | STATUS |
|---|---|
| Delhi Sands Flower-loving Fly Rhaphiomidas terminatus abdominalis<br>**No critical habitat** has been designated for this species.<br>http://ecos.fws.gov/ecp/species/1540 | Endangered |

## Mammals

| NAME | STATUS |
|---|---|
| San Bernardino Merriam's Kangaroo Rat Dipodomys merriami parvus<br>There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat.<br>http://ecos.fws.gov/ecp/species/2060 | Endangered |
| Stephens' Kangaroo Rat Dipodomys stephensi (incl. D. cascus)<br>**No critical habitat** has been designated for this species.<br>http://ecos.fws.gov/ecp/species/3495 | Endangered |

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

| NAME | TYPE |
|---|---|
| San Bernardino Merriam's Kangaroo Rat Dipodomys merriami parvus http://ecos.fws.gov/ecp/species/2060#crithab | Final designated |
| Santa Ana Sucker Catostomus santaanae http://ecos.fws.gov/ecp/species/3785#crithab | Final designated |
| Southwestern Willow Flycatcher Empidonax traillii extimus http://ecos.fws.gov/ecp/species/6749#crithab | Final designated |

# Migratory birds

Birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location, not a list of every bird species you may find in this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources.

| NAME | SEASON(S) |
|---|---|
| Bald Eagle Haliaeetus leucocephalus http://ecos.fws.gov/ecp/species/1626 | Wintering |
| Bell's Vireo Vireo bellii http://ecos.fws.gov/ecp/species/9507 | Breeding |
| Black-chinned Sparrow Spizella atrogularis http://ecos.fws.gov/ecp/species/9447 | Breeding |
| Brewer's Sparrow Spizella breweri http://ecos.fws.gov/ecp/species/9291 | Year-round |
| Burrowing Owl Athene cunicularia http://ecos.fws.gov/ecp/species/9737 | Year-round |
| Cactus Wren Campylorhynchus brunneicapillus http://ecos.fws.gov/ecp/species/8834 | Year-round |

| | |
|---|---|
| California Spotted Owl Strix occidentalis occidentalis<br>http://ecos.fws.gov/ecp/species/7266 | Year-round |
| Costa's Hummingbird Calypte costae<br>http://ecos.fws.gov/ecp/species/9470 | Breeding |
| Flammulated Owl Otus flammeolus<br>http://ecos.fws.gov/ecp/species/7728 | Breeding |
| Fox Sparrow Passerella iliaca | Year-round |
| Green-tailed Towhee Pipilo chlorurus<br>http://ecos.fws.gov/ecp/species/9444 | Breeding |
| Lawrence's Goldfinch Carduelis lawrencei<br>http://ecos.fws.gov/ecp/species/9464 | Year-round |
| Le Conte's Thrasher toxostoma lecontei<br>http://ecos.fws.gov/ecp/species/8969 | Year-round |
| Least Bittern Ixobrychus exilis<br>http://ecos.fws.gov/ecp/species/6175 | Year-round |
| Lesser Yellowlegs Tringa flavipes<br>http://ecos.fws.gov/ecp/species/9679 | Wintering |
| Lewis's Woodpecker Melanerpes lewis<br>http://ecos.fws.gov/ecp/species/9408 | Wintering |
| Loggerhead Shrike Lanius ludovicianus<br>http://ecos.fws.gov/ecp/species/8833 | Year-round |
| Long-billed Curlew Numenius americanus<br>http://ecos.fws.gov/ecp/species/5511 | Wintering |
| Mountain Plover Charadrius montanus<br>http://ecos.fws.gov/ecp/species/3638 | Wintering |
| Nuttall's Woodpecker Picoides nuttallii<br>http://ecos.fws.gov/ecp/species/9410 | Year-round |
| Oak Titmouse Baeolophus inornatus<br>http://ecos.fws.gov/ecp/species/9656 | Year-round |
| Olive-sided Flycatcher Contopus cooperi<br>http://ecos.fws.gov/ecp/species/3914 | Breeding |
| Peregrine Falcon Falco peregrinus<br>http://ecos.fws.gov/ecp/species/8831 | Wintering |
| Pinyon Jay Gymnorhinus cyanocephalus<br>http://ecos.fws.gov/ecp/species/9420 | Year-round |
| Red-crowned Parrot Amazona viridigenalis<br>http://ecos.fws.gov/ecp/species/9022 | Year-round |
| Rufous-crowned Sparrow Aimophila ruficeps<br>http://ecos.fws.gov/ecp/species/9718 | Year-round |
| Short-eared Owl Asio flammeus<br>http://ecos.fws.gov/ecp/species/9295 | Wintering |

| | |
|---|---|
| Tricolored Blackbird Agelaius tricolor<br>http://ecos.fws.gov/ecp/species/3910 | Year-round |
| Western Grebe aechmophorus occidentalis<br>http://ecos.fws.gov/ecp/species/6743 | Wintering |
| Williamson's Sapsucker Sphyrapicus thyroideus<br>http://ecos.fws.gov/ecp/species/8832 | Wintering |

**What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?**

**Landbirds:**

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

**Atlantic Seabirds:**

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAANCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the Northeast Ocean Data Portal. The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAANCCOS models: the models were developed as part of the NOAANCCOS project: Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf. The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the Northeast Ocean Data Portal, which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

**Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?**

**Landbirds:**

The Avian Knowledge Network (AKN) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest,survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the Migratory Bird Programs AKN Histogram Tools webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North, Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

**Atlantic Seabirds:**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAANCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

# Facilities

## Wildlife refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
- PEMCx

FRESHWATER POND
- PUSAx
- PUBFx

RIVERINE
- R4SBCr
- R4SBCx
- R4SBC
- R4SBA

A full description for each wetland code can be found at the National Wetlands Inventory website:
https://ecos.fws.gov/ipac/wetlands/decoder

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.



**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# M2: Biological Opinion & Amendment

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-SB-08B0369-17F0669

April 17, 2017
*Sent by Email*

Mr. Craig Wentworth
Senior Environmental Planner
Department of Transportation, District 8
464 West Fourth Street, 6th Floor
San Bernardino, California 92401

Subject: Amendment to the biological opinion issued for the Interstate 10 and Alder/Cedar/Riverside/Pepper Avenues Interchange Improvement Projects (FWS-SB-4339.5), San Bernardino County, California

Dear Mr. Wentworth:

On April 6, 2006, we, the U.S. Fish and Wildlife Service (Service), issued biological opinion FWS-SB-4339.5 to address the potential effects of the Interstate 10 (I-10) and Alder/Cedar/Riverside/Pepper Avenues Interchange Improvement Projects on the federally endangered Delhi sands flower loving fly (*Rhaphiomidas terminatus abdominalis*; DSF). On July 13, 2016, during a conference call with your agency and the local applicant, the San Bernardino Association of Governments, we were informed three of the four interchanges identified within the biological opinion were built. The interchange yet to be completed is Pepper Avenue which underwent a redesign based on revised traffic utilization projections. On January 3, 2017, we received an amended biological assessment (Caltrans 2017) identifying changes to the Pepper Avenue interchange (Project) from those presented in the 2005 biological assessment (Caltrans 2005).

This amendment to our biological opinion is based on information provided in the *Interstate 10 and Alder/Cedar/Riverside/Pepper Avenues Interchange Improvement Projects Biological Assessment* (Caltrans 2005; BA), *Natural Environmental Study Interstate 10 Corridor Project* (Caltrans 2015), *Amendment of Section 7 Consultation for the Interstate 10* (*I-10*) *Corridor Interchange Improvement Projects in San Bernardino County, CA* (*1-6-06-F-4-4339.5*) (Caltrans 2017; amended BA), *Interstate 10 Corridor Project Final Environmental Impact Report/Environmental Impact Statement and Section 4*(*f*) *Evaluation* (Caltrans 2016; EIR/EIS), in-person meetings; electronic correspondence; phone conversations; and other sources of information cited herein. A complete administrative record of this consultation is on file at the Carlsbad Fish and Wildlife Office located at 2177 Salk Avenue, Suite 250, Carlsbad, California, 92008.

The Project as proposed, is designed to enhance the level of service at the I-10/Pepper Avenue interchange by reducing traffic congestion. For more information on the proposed Project's purpose and need, please see the Project's EIR/EIS (Caltrans 2016).

## CONSULTATION HISTORY

On April 6, 2006, the Service issued a biological opinion for the I-10 Interchange Improvement Projects. On June 29, 2015, we were notified by Ken Osborne, of Osborne Consulting, of the intent to conduct DSF surveys in support of the I-10 Express Lanes addition Project. On July 19, 2016, the Service was notified DSF was observed within the proposed Project area. On May 17, 2016 the Service held a conference call with California Department of Transportation (Caltrans) staff, and the local applicant representative to discuss the I-10 Express Lane Addition Project and the request to amend the I-10/Pepper Avenue Interchange.

# BIOLOGICAL OPINION

## DESCRIPTION OF PROPOSED ACTION

Following a revised analysis of future traffic needs, the Project action was amended to meet the needs of the City of Colton's General Plan Circulation Element and projected traffic service levels at the I-10/Pepper Avenue Interchange. Elements to relieve traffic congestion within this area include the construction of one additional lane at the I-10 eastbound on-ramp and westbound off-ramp locations. These modifications will result in disturbance of the existing edge of the Caltrans right-of-way shoulder. In association with the eastbound on-ramp improvement, a retaining wall will be constructed at the southeast corner of the Pepper Avenue IC.

Based on adjusted traffic projections and refined engineering designs, the Project will result in 0.77-acres of permanent and 1.63-acres of temporary impacts to occupied DSF habitat. For a more complete description of Project related actions, please see the Amended biological assessment (Caltrans 2017).

### *Conservation Measures*

Caltrans, in accordance with their Federal delegated authority, will ensure implementation of the conservation measures presented in the previously issued biological opinion to avoid and minimize impacts to DSF. For more information, please see the Service's 2006 biological opinion and Caltrans 2005 biological assessment (Caltrans 2005).

For the additional impacts from the Project to occupied DSF habitat, Caltrans will purchase credits in the Colton Dunes, or other Service approved, mitigation bank at a ratio of 3:1 for permanent impacts (0.77 x 3 = 2.31 acres) and a ratio of 1:1 for temporary impacts (1.63 acres).

## STATUS OF THE SPECIES

DSF was listed as endangered on September 22, 1993 (Service 1993), and a recovery plan completed for the subspecies in 1997 (Service 1997). More detailed information on the status of the species can be found in the 5-year review (Service 2008). Please refer to the above documents for detailed information on the life history requirements, threats, and conservation needs of the DSF. These documents can be found at: http://ecos.fws.gov/.

*Status of the Species in the Vicinity of the Action Area*

As defined in the recovery plan (Service 1997), the proposed project area is within the Colton Recovery Unit. DSF habitat in the vicinity of the project area occurs within a mosaic of developed and undeveloped areas, primarily east of the project site. Developed areas that do not support DSF include roads and residential, industrial, and commercial facilities. Undeveloped areas that support DSF consist of vacant land with Delhi fine sand typically with a mix of native and nonnative vegetation and bare ground and/or sand dunes. There are occurrence records for DSF from various locations to the east and south of the project site.

*Threats to the Species in the Vicinity of the Action Area*

Apart from the threats discussed in the recovery plan and 5-year review, highway maintenance, which includes vegetation clearing, trash dumping, and debris removal, are of concern to continued persistence of DSF in the area.

*Conservation Needs in the Vicinity of the Action Area*

Within the vicinity of the action area, the Colton Recovery Unit remains important to the conservation and recovery of the DSF, as it area contains the largest remaining contiguous block of suitable habitat. Within this Unit, the Colton Dunes Conservation Bank and adjacent habitat, also contains the greatest number of extant populations of DSF. Preservation of the remaining unprotected populations north of I-10 and preservation of DSF habitat within the Colton Dunes Conservation Bank, combined with preservation of suitable DSF habitat south of I-10, will help achieve the needed habitat preservation identified in the recovery plan.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR §402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

In 2015, Caltrans informed the Service about upcoming protocol level DSF surveys in support of the I-10 Express Lanes Addition Project. Although results of the 2015 survey did not reveal DSF presence, towards the end of the 2016 survey period, a single DSF was observed on two occasions in the southeast quadrant of the Pepper Avenue Interchange. For more information, please see the DSF focused survey report within the amended BA (Caltrans 2017).

Action Area

According to 50 CFR §402.02 pursuant to section 7 of the Act, the “action area” means all areas to be affected directly or indirectly by the Federal action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

For this proposed action, we consider the action area to be 9.70 acres of disturbance associated with reconstruction of the Pepper Avenue Interchange. The action area also includes the surrounding habitat, which may be exposed to project-related effects such as increased noise, light, and dust levels and human activity during Project construction and operation of the facilities. This indirect impact area for the Project is defined as a 500-ft buffer beyond the permanent impact area, otherwise described in the amended biological assessment as the biological study area (Caltrans 2017).

Existing Conditions in the Action Area

The current interchange sits atop Delhi Fine Sand, the primary DSF habitat requirement. Within the southeast quadrant of the Project area, a mixture of native and non-native vegetation is present, bounded by the Burlington Northern Santa Fe (BNSF) railway further south.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action, are later in time, and still reasonably certain to occur.

*Direct Effects*

The current eastbound on-ramp is constructed at a higher elevation with a steep slope, which shields DSF in adjacent habitat from freeway disturbance and traffic. To provide for an additional lane and reconstruction of the retaining wall, the current eastbound onramp will extend into occupied DSF habitat. As a result, Project related actions will permanently reduce the amount of habitat within the action area by 0.77-acres, and also result in 1.63-acres of temporary impacts, for a total of 2.4 acres of impacts.

Permanent impacts will reduce the amount of habitat available to plants DSF use as a food source. Such plants include California buckwheat (*Eriogonum fasciculatum*), telegraph weed (*Heterotheca grandiflora*), and California croton (*Croton californicus*) (Service 2008). In addition, should DSF eggs or larvae occur within the Project impact area; these too will be subject to injury and/or mortality due to placement of impermeable surfaces or crushing from ground disturbing activities.

The 3.94 acres to be acquired is in addition to credits to be purchased under the 2006 biological opinion.

*Indirect Effects*

The removal of vegetation and replacement with an impermeable surface will lead to an increase in the amount of surface runoff during precipitation events. Conservation measures to be implemented within sensitive habitats minimize the impact to soils by clearly delineating the boundary of disturbance and entry into sensitive habitat by motorized vehicles. With the application of Best Management Practices, impacts from erosion and entry into adjacent habitat are expected to be negligible.

DSF could be indirectly affected if construction activities encroached onto adjacent vacant lands that contain Delhi fine sand. To prevent unintentional encroachment into offsite habitat during construction, the limits of construction will be delineated with construction fencing and construction personnel will receive training about potential impacts to DSF and restricted areas prior to initiation of ground-disturbing activities.

CUMMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Project action area is completely within Caltrans Right-Of-Way, and we have no information regarding future State, Tribal, local, or private activities that are reasonably certain to occur within the action area.

CONCLUSION

After reviewing the current status of the DSF, environmental baseline for the action area, effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the DSF. We reached this conclusion because 1) the project area is small with limited potential to support DSF reproduction, and/or dispersal, and 2) in addition to lands acquired under the 2006 biological opinion, Caltrans will purchase 3.94 acres of habitat within the Colton Dunes, or other Service approved, DSF Conservation Bank. The purchase of conservation lands will contribute to the recovery goal of establishing long-term conservation for DSF within the Colton Recovery Unit.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm is further defined by us to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by us as an action that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2) of the Act, such incidental take is not considered a prohibited taking under the Act, provided that such taking is in compliance with this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any permit or grant documents issued to the permittee, as appropriate, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans fails to assume and implement the terms and conditions of the incidental take statement or to make them enforceable terms of permit or grant documents, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of the incidental take, Caltrans must report the progress of the action and its impact on the species to the

Palm Springs Fish and Wildlife Office (PSFWO) as specified in the incidental take statement [50 CFR § 402.14(i)(3)]. The exemption provided by this incidental take statement to the prohibitions against take contained in section 9 of the Act extends only to the action area as described in the Environmental Baseline section of this biological opinion.

AMOUNT OR EXTENT OF TAKE

Based on the proposed Project and analysis of the effects of the proposed action provided above, we anticipate that DSF may be accidentally injured or killed during Project activities. We expect incidental take of individual DSF will be difficult to detect because during the underground phases of its life we are unable to identify its presence. Therefore, quantifying the exact take of DSF is not possible. Because we lack information on the actual numbers, distribution, density, or reproduction of continued DSF occupancy within the project area, we cannot quantify with certainty the amount of take that will occur.

We expect that finding dead or injured DSF will be difficult, as individual flies, larvae, or eggs may be crushed or buried underground as a result of construction activities. Therefore, for purposes of monitoring take, we are quantifying take of DSF as measured by the acres of occupied DSF habitat impacted by the Project. Thus, we anticipate that DSF may be incidentally taken within the 2.4 acres of occupied Delhi fine sands impacted by the Project. We will consider the take threshold to be exceeded if any of these land use acreages are exceeded.

EFFECT OF THE TAKE

In this biological opinion, based upon the amount of area of impacted and the number of DSF observed over the two year survey period, we have determined the level of anticipated take is not likely to result in jeopardy to DSF.

REASONABLE AND PRUDENT MEASURES

Caltrans shall implement the conservation measures included as part of the proposed action analyzed in this biological opinion to minimize the incidental take of DSF. In addition to these conservation measures, we consider the following reasonable and prudent measures are necessary to minimize the effects of incidental take on the DSF:

1. Caltrans shall monitor and report on compliance with the established take thresholds for the DSF associated with the proposed action; and

2. Prior to the onset of ground disturbance, Caltrans shall submit a record of credits purchased from a Service approved DSF mitigation bank.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans shall comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

To implement reasonable and prudent measure number 1 (monitor and report on compliance with established DSF take thresholds), Caltrans shall:

1.1 Implement the conservation measures as specified in the original biological opinion. If the biological monitor detects impacts to DSF from Project-related activities in excess of that described in the above incidental take statement, Caltrans will contact the PSFWO immediately.

1.2 Caltrans shall submit a report following completion of the Project, identifying total acreage impacted.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

## REINITIATION NOTICE

This concludes formal consultation regarding the proposed Project as described in materials submitted to us. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

For further information about this biological opinion, please contact John M. Taylor of the PSFWO, 777 East Tahquitz Canyon Way, Suite 208, Palm Springs, California 92262, or by phone at 760-322-2070, extension 418.

Sincerely,

KENNON COREY Digitally signed by KENNON COREY Date: 2017.04.17 16:09:52 -07'00'

Kennon A. Corey
Assistant Field Supervisor

## LITERATURE CITED

[Caltrans] California Department of Transportation. 2005. Interstate 10 and Alder/Cedar/Riverside/Pepper Avenues Interchange Improvement Projects Biological Assessment.

[Caltrans] California Department of Transportation. 2015. Natural Environmental Study Interstate 10 Corridor Project. San Bernardino and Los Angeles Counties, 07-LA-10 PM 44.9/48.3, 08-SBD-10 PM 0.0/R37.0 (EA 0C2500). December 2015.

[Caltrans] California Department of Transportation. 2016. Interstate 10 Corridor Project Final Environmental Impact Report/Environmental Impact Statement and Section 4(f) Evaluation. November 2016.

[Caltrans] California Department of Transportation. 2017. Amendment of Section 7 Consultation for the Interstate 10 (I-10) Corridor Interchange Improvement Projects in San Bernardino County, CA (1-6-06-F-4-4339.5).

[Service] U.S. Fish and Wildlife Service. 1993. Endangered and threatened wildlife and plants; Determination of endangered status for the Delhi Sands Flower-loving Fly. Federal Register 58:49881-49887.

[Service] U.S. Fish and Wildlife Service. 1997. Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) Recovery Plan.

[Service] U.S. Fish and Wildlife Service. 2008. Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) 5-Year Review: Summary and Evaluation.

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011

In Reply Refer To:
FWS-SB-4339.5

APR 06 2006

Mr. Gene Fong
Division Administrator
Federal Highway Administration
California Division
650 Capitol Mall, Suite 4-100
Sacramento, California 95814

Attention: Larry Vinzant

Subject: Formal Section 7 Consultation for Interstate 10 (I-10) Corridor Interchange Improvement Projects in San Bernardino County, California (1-6-06-F-4339.5)

Dear Mr. Fong:

This document transmits the United States Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed I-10 corridor interchange improvement projects in San Bernardino County, California, and its effects on the federally endangered Delhi sands flower loving fly (*Rhaphiomidas terminatus abdominalis*, "DSF") in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). The project includes improvements to the I-10 interchanges at Cedar, Riverside, and Pepper Avenues and the creation of a new interchange at Alder Avenue. The projects will be constructed by San Bernardino County and the cities of Rialto, Colton, and Fontana with local assistance provided by Caltrans and funding provided, in part, by the Federal Highway Administration (FHWA). Your request for formal consultation was received on November 3, 2005.

This biological opinion is based on information provided in the *Interstate 10 and Alder/Cedar/Riverside/Pepper Avenues Interchange Improvement Projects Biological Assessment* (BA) dated August 2005 (Michael Brandman Associates [MBA] 2005) and other correspondence, notes and information compiled during the course of our consultation with the Federal Highway Administration (FHWA) on the subject project. This information and other references cited in this biological opinion constitute the best available scientific information on the status and biology of the species considered. The complete project file for this consultation is on file at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

On January 26, 2000, FHWA initiated formal consultation regarding improvements to the I-10/Pepper Avenue interchange and the Pepper Avenue/Valley Boulevard intersection. During the consultation period, the Service worked with the County of San Bernardino, Caltrans, and FHWA to develop an appropriate conservation strategy for the project. On July 13, 2000, the Service provided the FHWA and the County of San Bernardino a draft biological opinion for this project. However, ongoing discussions about the scope of the proposed project and the conservation strategy for the project kept this consultation from being finalized.

On January 9, 2003, FHWA sent the CFWO an electronic mail message proposing to conduct a study of all proposed interchanges along the I-10 corridor through the range of the DSF. Rather than consulting separately on each of the proposed interchanges, the FHWA proposed to develop a conservation strategy to address effects to DSF associated with all proposed interchange improvements at once.

On September 9, 2003, FHWA suspended formal consultation on the I-10/Pepper Avenue interchange and the Pepper Avenue/Valley Boulevard intersection projects.

In an effort to develop a conservation strategy for the I-10 corridor, a series of meetings between the stakeholders were held on August 3, 2004, September 9, 2004, and November 4, 2004. On the basis of biological information gathered in 2004, it was agreed that the western interchange projects (Cherry, Beech, Cypress, and Citrus) would have no adverse effect on the DSF, but a conservation strategy would be developed for the eastern interchange projects (Alder, Cedar, Riverside, and Pepper). A general conservation strategy was agreed to by the stakeholders at the November 4, 2004, meeting and was finalized during the preparation of the BA.

On December 20, 2004, the FHWA sent the CFWO a letter documenting that the four western interchanges would have no effect on DSF, but that formal consultation would be initiated to address adverse effects to DSF associated with the four eastern interchanges.

On November 3, 2005, the FHWA sent the CFWO a letter initiating formal consultation for the four eastern interchanges. In our letter (FWS-SB-4339.3) dated November 21, 2005, we acknowledged your request for formal consultation and agreed that consultation was initiated on November 3, 2005.

On February 16, 2006, the CFWO sent a draft biological opinion (FWS-SB-4339.4) for the proposed project to Caltrans, FHWA, the County of San Bernardino, the San Bernardino Association of Governments (SANBAG), and the cities of Fontana and Rialto for review. Minor comments by FHWA were incorporated into the final biological opinion. The rest of the entities had no comments.

## BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The following project descriptions are based on the best available information at the time the Biological Assessment was prepared (MBA 2005). The footprint for each of the interchange improvement projects are shown in the Biological Assessment in Figures 3, 4, 5, and 6a. In some cases, the proposed projects include different alternatives. All of the proposed alternatives described here are covered under this biological opinion. Minor changes in the project description may also be covered under this biological opinion, provided there is no change in potential impacts to DSF or its habitat. As described in the "Conservation Measures" section of this biological opinion, the project proponent will submit the final project description with an accompanying figure showing the project footprint to the CFWO and FHWA for review and approval prior to initiating project-related construction, grading, or other ground-disturbing activity.

*Alder Avenue Interchange*

The Alder Avenue/I-10 interchange is located in the County of San Bernardino in the sphere of influence of the City of Fontana and is identified as one of the transportation infrastructure improvements necessary to complete the City of Fontana's circulation system and will help to close the existing north-south access gap, which currently divides the community. The proposed new Alder Avenue/I-10 Interchange will allow for local circulation of traffic to and from nearby residential, commercial, and industrial areas while relieving congestion at the adjacent freeway interchanges. The proposed interchange will provide much-needed access, particularly for emergency services to the Kaiser Permanente Hospital, a regional trauma center.

The proposed interchange will involve a new overcrossing bridge over I-10 and a new overhead bridge over the Union Pacific Railroad tracks to connect the northern and southern alignments of Alder Avenue. Build alternatives under consideration include an overcrossing, partial cloverleaf, diamond and single point interchanges. Exhibit 3 in the BA shows the development footprint for this proposed new interchange project as a single point interchange. Other alternatives have similar footprints except the overcrossing alternative does not include ramps. Alder will be widened from its current two-lane configuration to up to six lanes between Slover Avenue to the south of the freeway and Valley Boulevard to the north of the freeway. North of Valley Boulevard and south of Slover Avenue, Alder would be transitioned back to its existing configuration at the time of construction. Between the eastbound and the westbound ramp intersections with Alder Avenue, there would be up to ten lanes to accommodate left turn lanes. The proposed interchange will provide a new connection between the 2.5-mile separation between the existing Sierra Avenue Interchange and Cedar Avenue Interchange. Exhibit 3 in the BA shows the existing rights-of-way and development footprint for the proposed interchange improvement project.

*Cedar Avenue Interchange*

Proposed improvements to the Cedar Avenue/I-10 Interchange will allow for implementation of roadway improvements consistent with the Circulation Element of the San Bernardino County General Plan and will enhance traffic operations and reduce existing traffic congestion on Cedar Avenue by improving the level of service, especially at the I-10 ramp intersections. Cedar Avenue is a major north-south arterial through the unincorporated community of Bloomington which is under the jurisdiction of the County of San Bernardino. The interchange will maintain its current diamond configuration.

The proposed project will widen Cedar Avenue from four to six lanes between Slover Avenue to the south of the freeway and Valley Boulevard to the north of the freeway. The existing bridge over the freeway and the bridge over the railroad will be widened to support the new road width. Between the eastbound and the westbound ramp intersections with Cedar Avenue, there will be up to ten lanes to accommodate left turn lanes. In addition, the ramps will be widened to three lanes on and four lanes off at the ramp termini, where the ramps intersect Cedar Avenue. A diverge auxiliary lane, 1,312 feet long, and merge auxiliary lane, 984 feet long, at the eastbound on and off-ramp connections to the freeway are part of the project. The project limits along Cedar Avenue extend north nearly to Bloomington Avenue and south about 400 feet south of Slover Avenue. The project limits on I-10 are 3,766 feet west and 3,780 feet east of the Cedar Avenue centerline (including auxiliary lanes for the on and off-ramps). In addition, Slover Avenue will be improved 656 feet east and west of Cedar Avenue to improve the intersection. Exhibit 4 in the BA shows the existing rights-of-way and development footprint for the proposed interchange improvement project.

*Riverside Avenue Interchange*

The proposed improvements to Riverside Avenue/I-10 Interchange will allow for implementation of roadway improvements consistent with the Circulation Element of the City of Rialto General Plan and will enhance traffic operations and reduce existing traffic congestion on Riverside Avenue by improving the level of service, especially at the I-10 ramp intersections. Riverside Avenue is a major north-south arterial in the City of Rialto. The interchange will maintain its current diamond configuration.

The proposed project will widen Riverside Avenue from four to five lanes between Slover Avenue south of the freeway and Valley Boulevard to the north of the freeway. The existing bridge over the freeway will be replaced. No widening of the bridge over the railroad is included in this project except minor modification to the northerly end of the west bridge railing. Work south of the eastbound ramps intersection with Riverside Avenue consists of striping modifications to accommodate an additional lane northbound. Between the eastbound and the westbound ramp intersections with Riverside Avenue, there will be nine lanes to accommodate four left turn lanes. In addition, the ramps will be widened to three lanes on and four lanes off at the ramp termini, where the ramps intersect Riverside Avenue. Diverge auxiliary lanes, 1,312

feet long at the eastbound off-ramp connection to the freeway and 656 feet long at the westbound off-ramp connection to the freeway, are also part of the project.

The project limits along Riverside Avenue extend from about 2,099 feet south of the interchange to about 328 feet north of Valley Boulevard and along I-10 from about 1.8 miles west of Riverside Avenue to about 1.6 miles east of Riverside Avenue. These limits include the placement of construction signs. Exhibit 5 in the BA shows the existing rights-of-way and development footprint for the proposed interchange improvement project.

*Pepper Avenue Interchange*

The proposed improvements to Pepper Avenue/I-10 Interchange will allow for implementation of roadway improvements consistent with the Circulation Element of the City of Colton General Plan and that will enhance traffic operations and reduce existing traffic congestion on Pepper Avenue by improving the level of service, especially at the I-10 ramp intersections. The proposed interchange will provide primary and much-needed access for emergency services to the Arrowhead Regional Medical Center, a regional trauma center. Pepper Avenue is a major north-south arterial in the City of Colton principally north of the freeway. The interchange will maintain its current diamond configuration.

The proposed project will widen Pepper Avenue between the railroad overhead south of the freeway and Valley Boulevard north of the freeway. The existing bridge over the freeway will be replaced. Some widening of the bridge over the railroad may also be included in this project. Left turn lanes will be added between the eastbound and the westbound ramp intersections with Pepper Avenue. In addition, the ramps will be widened to three lanes on and three lanes off at the ramp termini where the ramps intersect Pepper Avenue. Diverge (1,312 feet long) and merge (984 feet long) auxiliary lanes will be part of the project.

Work on the interchange would extend from 0.3 miles west to 0.9 miles east of the Pepper Avenue overcrossing. Exhibit 6a in the BA shows the existing right-of-way and development footprint for the proposed interchange improvement project.

The relocation of the Pepper Avenue/Valley Boulevard intersection is not part of this project and is being addressed under a separate Habitat Conservation Plan (see Cumulative Effects analysis).

Conservation Measures

The applicant proposes the following onsite conservation measures as part of the proposed action to minimize and avoid impacts to DSF:

1. In order to ensure that there are no unanticipated direct or indirect effects to DSF associated with the interchange improvements, a final project description and updated exhibit

will be sent to the CFWO and FHWA for review and approval prior to initiating project-related construction activities for each project.

2. Prior to initiating project-related construction activities, the limits of construction, including all access roads and staging areas, will be staked. A qualified biologist acceptable to the CFWO will examine the limits of construction to ensure that the project is consistent with the project description approved by the CFWO and that there will be no unanticipated impacts to potential DSF habitat. The biologist will conduct periodic (about once every two weeks) site visits to ensure that the construction limits are maintained. If there are any unanticipated impacts to potential DSF habitat, construction in that area will be halted immediately, and the CFWO will be contacted to address the issue.

3. Prior to initiating project-related construction activities for each of the proposed interchange improvement projects, the lead agency for the respective project will provide the CFWO documentation that the number conservation credits identified in Table 1 have been purchased in the Colton Dunes Conservation Bank.

Table 1. Conservation Credits to be Acquired for I-10 Corridor Interchanges

| **Interchange** | **Conservation Credits to be Acquired (Acres)** |
|---|---|
| Alder Avenue | 5.90 |
| Cedar Avenue | 0.22 |
| Riverside Avenue | 6.32 |
| Pepper Avenue | 17.06 |

If credits are not available from the Colton Dunes Conservation Bank, then conservation area(s) of the same acreage and equivalent or better quality within the Colton Recovery Unit (for Cedar, Riverside, and Pepper Avenue interchanges) or the Jurupa or Colton Recovery Units (for Alder Avenue interchange) will be permanently protected and managed for the long-term benefit of DSF. If areas outside the Colton Dunes Conservation Bank are selected for conservation, the following measures must be taken prior to initiating project-related construction to ensure that the lands are suitable and provide adequate protection for DSF over the long term:

a) The proposed conservation sites must be approved by the CFWO

b) A conservation easement will be reviewed and approved by the CFWO, and a copy of the executed conservation easement will be provided to the CFWO.

c) If the selected site requires restoration before it provides adequate habitat value for the DSF, a restoration plan will be reviewed and approved by the CFWO.

d) A long-term management plan will be reviewed and approved by the CFWO. The long-term management plan will include measures to control human access, remove trash and

debris, remove non-native plants, monitor the DSF population and habitat quality, and submit annual reports to the CFWO.

e) A Property Analysis Record (PAR) or similar analysis method will be completed to determine the amount of funding required to manage the site consistent with the long-term management plan.

f) A non-wasting endowment will be established to provide sufficient funds to implement the long-term management plan. Evidence that the non-wasting endowment has been established will be submitted to the CFWO.

g) A land manager acceptable to the CFWO will be selected to manage the property using the funds in the non-wasting endowment.

STATUS OF THE SPECIES

*Listing Status*

The Delhi Sands flower-loving fly, *Rhaphiomidas terminatus abdominalis* (Diptera: Mydidae), was listed as endangered on September 22, 1993, pursuant to section 4 of the Act. The DSF was listed because widespread loss and degradation of its habitat had proceeded to the point where extinction was imminent. Critical habitat for DSF has not been proposed or designated. A recovery plan was completed in 1997 (Service 1997).

*Species Description*

The DSF is one of 19 *Rhaphiomidas* species and 5 recognized subspecies, all of which are restricted to southwestern United States and northwestern Mexico (Cazier 1985; Peterson 1981; Rogers and Mattoni 1993). DSF adults are large insects (about 2.5 centimeters in length) with elongate bodies. An important distinguishing character is the DSF's long proboscis, which it uses to extract nectar while hovering next to flowers. The DSF is a strong, fast flyer capable of dispersal flights in which animals fly so rapidly that observers quickly lose visual contact (Kingsley 1996).

*Habitat Affinities*

The DSF is generally found in areas containing Delhi fine sands soil type. The areas covered by these Delhi soils make up the Colton Dunes system, which originally covered an estimated 88 square kilometers (40 square miles) within southwestern San Bernardino and northwestern Riverside counties (Woodruff and Brock 1980).
The dominant physical characteristic of the Colton Dunes ecosystem is a series of dynamic windblown (aeolian) dunes, subject to repeated ground surface changes during periodic, seasonal, high winds. "Santa Ana" winds normally occur during autumn and winter and

facilitate transportation and maintenance of sand and provide periodic endogenous disturbance, disturbance to which the system has been exposed repeatedly through evolutionary time (McIntyre and Hobbs 1999). The endogenous disturbance of the dune system by high winds may be an essential component of ecosystem function for the DSF.

Characteristic plants associated with the DSF include California buckwheat *(Eriogonum fasciculatum)*, telegraph weed *(Heterotheca grandifolia)*, and California croton *(Croton californicus)*. Increased cover of introduced vegetation appears to reduce DSF abundance (Ballmer 1989). Suitable habitat ideally contains only sparse vegetative cover, usually less than 40 percent. The Colton Dunes also support a number of other rare plants and animals including the legless lizard *(Anniella pulchra)*, San Diego horned lizard *(Phrynosoma coronatum blainvillii)*, Delhi Sands metalmark butterfly *(Apodemia mormo nigrescens)*, Delhi Sands Jerusalem cricket *(Stenopelmatus* undescribed species), convergent apiocerid fly *(Apiocera convergens)*, and the potentially extinct Pringle's monardella *(Monardella pringlei)*. The Delhi Sands metalmark butterfly was recently described from the area (Emmel and Emmel 1998).

*Life History*

The life history of the DSF is largely unknown. Oviposition (egg laying) generally occurs within loose, sandy soils in late summer months and may primarily occur near telegraph weed (Rogers and Mattoni 1993; Kingsley 1996). Larval stages develop completely underground and emerge as adults from July through September. Larval food sources are unknown. Most larvae within the Mydidae are predacious (Borror *et al.* 1989), but DSF larvae failed to feed when presented with a variety of potential prey sources in laboratory trials (Rogers and Mattoni 1993). Adults are most active during the warmest, sunniest parts of the day, and both males and females extract nectar from California buckwheat (Kingsley 1996). It is not clear if nectar feeding is essential for adult survival or reproduction.

*Status and Distribution*

As of 1989, Balmer estimated that over 97 percent of the Colton Dunes system had been developed or severely modified (Ballmer 1989). This loss of Delhi soils was primarily attributed to conversion of land to agricultural uses and development for urban or commercial use (Service 1997). Based on a preliminary GIS analysis of mapped soils and updated aerial photography, the loss of potentially suitable habitat may be closer to 90 percent (U. S. Fish and Wildlife GIS mapping 2003). This difference is a reflection of the fact that DSF are now known to utilize moderately disturbed habitats such as the Fontana Business Center site.

Of the approximately 29,337 acres of Delhi soils that existed historically within San Bernardino and Riverside counties (the presumed original range of DSF), approximately 5,881 acres of Delhi soils outside of "dairy" areas were still vacant or undeveloped in 1999. Of that 5,881 acres, about 2,861 have a moderate or high potential to support DSF based on survey results (U. S. Fish and Wildlife GIS mapping 2003). Only 16 known locations of the DSF have been

identified in areas that are not developed, and the status of many of these populations is unknown. In addition, development has been authorized at two of these locations (FWS-WRIV-1968; FWS-WRIV-1788). Virtually all populations occur in small, isolated habitat patches surrounded by incompatible land uses and are highly vulnerable to extirpation. Nearly all areas with extant populations have been proposed for development at some time, and almost all remaining habitat is privately owned.

The number of individuals observed at known occupied sites is extremely low in comparison with population sizes of related species with similar ecological and life history strategies (Rogers and Mattoni 1993). Due to the cryptic nature of the DSF and existing regulations that do not allow mark-recapture techniques, it is not possible to accurately estimate population sizes for the DSF (Kingsley 2002). However, few DSF surveys report five or more individuals from occupied sites, and this supports Rogers and Mattoni's (1993) assertion that no more than a few hundred individuals existed in 1989. It is likely that even fewer DSF exist today than in 1989 due to continued habitat loss and fragmentation. In addition, the quality of habitat and the area of Delhi soils now available to sustain breeding colonies at the 16 occupied sites are variable. The highest quality and largest contiguous block of available Delhi sands are found within the Colton recovery unit. Lands currently in conservation for the DSF include limited areas within five of the seven known breeding sites and one additional site where DSF have been observed, but no reproduction has been documented. A total of 112 acres of land throughout the three recovery units is currently conserved for the DSF, and an additional approximately 175 acres have been proposed for conservation.

Ontario Recovery Unit

DSF have been observed at 3 locations within the Ontario recovery unit.

1. *Mira Loma Location* - Evidence of breeding was observed on an approximately 32-acre site near Mira Loma (Impact Sciences 1997; Thomas Olsen Associates Inc. 1999; Ecological Sciences 2001; P. Sorenson pers. obs. 1997; R. Rogers pers. obs. 1998; K. Osborne pers. obs. 1999). A 3-acre parcel and a 10-acre parcel have been acquired for DSF conservation at this Mira Loma location.

2. *SCE Easement in Ontario* - Evidence for breeding was also observed on an approximately 40-acre Southern California Edison easement in Ontario (Wilcox 1998a).

3. *Shaw Property* - A single male DSF was observed on a 30-acre parcel north of State Route 60, south of Philadelphia Street, east of Dulles Drive and west of the San Sevaine Storm Drain Channel in Mira Loma (Ecological Sciences 2000). This site may be developed through an HCP currently under consideration (FWS-WRIV-1968).

Jurupa Recovery Unit

Within the Jurupa recovery unit, DSF have been observed at six sites.

1. *SCE Easement in Fontana* - At an approximate 20-acre site south of Jurupa Avenue along a Southern California Edison right-of-way easement approximately 0.5 miles south of the Fontana Business Center project site and south of Jurupa Avenue, one male DSF was observed in 1998; however, no additional sightings were recorded in seven subsequent visits (Wilcox 1998a). This easement may serve as an effective corridor for movement of DSF between populations, but it is unlikely to support a stable DSF population in isolation.

2. *Santa Ana/Locust* - A single DSF was observed at the corner of Santa Ana Avenue and Locust Avenue (Sprague 1998) within a residential area east of the Empire Center site. This observation was not near any undeveloped area thought to suitable for a DSF breeding colony; thus, this DSF was likely dispersing in search of suitable habitat patches.

3. *NW Slover/Locust* - At least one DSF was observed in a 17-acre parcel northwest of the intersection of Slover Avenue and Locust Avenue in the unincorporated San Bernardino County (K. Osborne, pers. comm. 2004).

4. *Rattlesnake Mountain* - DSF were observed on Rattlesnake Mountain (G. Ballmer, pers. obs. 1996).

5. *Jurupa Hills/Southridge* - The Jurupa Hills/Southridge site is part of the Jurupa Hills population of DSF. Outside of the Colton recovery unit, the Jurupa Hills population of DSF is the only population that the recovery plan specifically identifies for conservation in order for the DSF to be considered for down-listing. The Jurupa Hills/Southridge site consists of approximately 30 acres of conserved DSF habitat in Riverside County and an additional 62 acres of privately-owned, non-conserved habitat in San Bernardino County within Fontana (FWS-1-6-00-F-09). Of the 62-acre parcel, 22 acres of occupied DSF habitat have been proposed for conservation (FWS-SB-1788.9). There have been numerous observations of DSF, over multiple years, at the Jurupa Hills/Southridge site, and a pupal case was found in 1995 demonstrating reproduction (G. Ballmer pers. comm.).

6. *Empire Center* - The Empire Center site is roughly 200 acres of suitable and potential DSF habitat east of Sierra Avenue and north of Santa Ana Avenue in Fontana. Several DSF were observed at the Empire Center site including a teneral, or newly emerged adult, demonstrating that reproduction of DSF occurs on this site (Osborne 2002a; Goodlett 2002). Incidental take of all DSF at this site was authorized on February 5,

2004, through section 7 consultation and issuance of a biological opinion to the Corps of Engineers (FWS-SB-1788.9).

Colton Recovery Unit

The Colton recovery unit supports seven known DSF locations. Two additional DSF-occupied locations were developed prior to listing.

1. *Slover/Pepper* - The largest location currently occupied by DSF is roughly 500 acres of contiguous habitat at the intersection of Slover Avenue and Pepper Avenue south of Interstate 10 and north of Agua Mansa Road in Colton, and this site is known to by occupied by DSF (Ballmer 1989; Osborne 2003a; Goodlett 2004a; Service 2004 unpublished data). Evidence of breeding has been observed at this site (Wilcox 1998b, 2002), and a 7.5-acre site has been acquired for conservation through the Colton Substation Terminal Habitat Conservation Plan (HCP) (FWS-SB-898). Vulcan Materials Inc. has established a conservation bank (the Colton Dunes Conservation Bank) over 150 acres of this area.

2. *"King Is Coming" Dune Subcomplex* - Excellent DSF habitat is found in two 30-acre sites, which are connected by potentially suitable habitat, south of San Bernardino Avenue between Riverside and Pepper Avenues, and evidence of breeding has been observed (Osborne 1999; Goodlett 2003; Service 2004 unpublished data). A total of 14.8 acres have been set aside for conservation in this location through the Laing Homes and Reichel HCPs (FWS-SB-760; Service 1996). While the DSF habitat in this area is highly fragmented by existing development, it is likely that the resident DSF population survives within the relatively small (5 to 40-acre) patches of habitat with frequent dispersal among these patches.

3. *"Hospital Preserve" Subcomplex* - Evidence of breeding and recent occupation have been observed in the 10-acre Hospital Preserve, which has been set aside for DSF conservation, south of Arrowhead Regional Medical Center in Colton (Kingsley 1996; Service 2004 unpublished data). This site is contiguous with occupied 20-acre and 18-acre sites to the east (Osborne 2002b, Osborne 2003b). It is likely that the existing DSF in this area survive in small patches with frequent dispersal similar to the *"King Is Coming" Dune Subcomplex*. It is also likely that DSF occasionally disperse between the *"King Is Coming" Dune and "Hospital Preserve" Subcomplexes* in the Colton recovery unit, and these subcomplexes may act together as one relatively large complex. An 11-acre parcel has been proposed for DSF conservation in this subcomplex (FWS-SB-3467.4).

4. *Randall Basin* - Several DSF were observed on this 18-acre San Bernardino County Department of Transportation, Department of Flood Control detention basin northeast of the intersection of Pepper and Randall Avenues (Thomas Olsen and Associates 1998).

Approximately 13 acres of this site are within a detention basin that experiences frequent disturbance. The *"King Is Coming" Dune Subcomplex* is the nearest known occupied site and is separated from the Randall Basin by over 0.5 mile of commercial and residential development.

5. *Angelus Block* - This site, generally surrounding Industrial Avenue in Rialto, was judged to be approximately 265 acres of habitat in 1989 (Ballmer 1989), and DSF have been observed several times with no evidence of breeding (Ballmer 1989; RB Riggan and Associates 1996; Larry Munsey International Inc. 1998; Wilcox 1998a; B. Drake, pers. obs. 2004; Goodlett 2004b). A total of 36.5 acres have been set aside for DSF conservation in this site through the Angelus Block HCP and Agua Mansa MOU side agreements (FWS-1-6-97-F-12; FWS-SB-771).

6. *Agua Mansa Industrial Area* - Two male DSF were observed with no evidence of breeding in the Agua Mansa Industrial Center where Agua Mansa Road crosses the San Bernardino and Riverside County line (Thomas Olsen and Associates 1996).

7. *Sycamore/Arlu* - DSF have been observed near the intersection of Sycamore Avenue and Arlu Street in Rialto (Osborne 2003c).

In total, within San Bernardino County, approximately 104 acres of habitat have been acquired for DSF conservation. Thirteen acres of DSF habitat were acquired for conservation in the City of Ontario. In the City of Colton, approximately 25 acres are conserved north of Interstate 10, and 44 acres south of Interstate 10. Within Riverside County, 30 acres of DSF habitat were acquired in the Jurupa Hills for DSF conservation, and approximately 22 acres will be conserved immediately north of this parcel in the City of Fontana. In most cases, substantial additional lands will need to be acquired to ensure long-term conservation of existing populations. In addition, habitat corridors will need to be established and protected to allow for dispersal among sites.

*Threats*

The primary cause for the decline of the DSF is degradation of its habitat for agricultural and dairy uses and, more recently, the destruction of habitat through residential, urban and commercial development. Increasingly, areas of low density or rural development are being converted to high-occupancy residential or commercial developments resulting in the continued loss and fragmentation of DSF habitat patches on private lands. Nationwide, this conversion and fragmentation represents a major threat to ecosystem health and conservation of biological diversity (Meffe and Caroll 1997). Development has led to the direct loss of DSF habitat and populations and resulted in indirect impacts to habitat through fragmentation and associated edge effects, including disruption of aeolian movement of sand throughout the Colton Dunes ecosystem.

DSF populations are at risk simply because of their small size. Small populations have higher probabilities of extinction than larger populations because their low abundance renders them susceptible to inbreeding, loss of genetic variation, high variability in age and sex ratios, demographic stochasticity and other random naturally occurring events, like wildfires, floods, droughts, or disease epidemics (Soulé 1987). Owing to the probabilistic nature of extinction, some small populations will survive in the short term when faced with these demographic, environmental, and genetic stochastic risks, but will eventually disappear.

Another factor that renders populations vulnerable to stochastic events is isolation, which often acts in concert with small population size to increase the probability of extinction. Urbanization and land conversion have fragmented the historic range of the DSF such that remaining blocks of occupied habitat may now function more independently of each other where they were formerly connected. Isolated populations are more susceptible to long-term/permanent extirpation by accidental or natural catastrophes because the likelihood of recolonization following such events is negatively correlated with the extent of isolation. The extirpation of remnant populations during local catastrophes will continue to become more probable as land development eliminates habitat and further constricts remaining populations. For these reasons, preservation of remaining occupied sites alone will not ensure DSF survival. Because the DSF has moderate movement ability in the adult phase (flying), different types of surrounding non-habitat, such as a vacant field versus commercial development, will have different effects on dispersal potential between habitat fragments (Ricketts 1999).

Fragmentation of habitat and the consequent edge effects often lead to increased vulnerability to introduced predators and competitors. For example, Argentine ants (*Linepithema humile*) are invading native California ecosystems. These non-native ants may have adverse direct or indirect effects on DSF populations. Argentine ants are known to exclude native ant species upon invasion (Holway *et al.* 2002), and they are known to reduce Dipteran species richness and abundance in urban southern California habitat fragments (Bolger *et al.* 2000). Argentine ants could adversely affect DSF individuals directly by preying on larva and teneral (newly emerged) adults, by affecting the ecosystem prey base or seed plants, or by disrupting key ecosystem functions typically carried out by native ants. Invasion of these ants is expected with development and associated irrigation adjacent to areas occupied by DSF and can have cascading effects through the ecosystem.

Edge effects also facilitate the introduction of invasive, alien weeds that degrade DSF habitat by out-competing and supplanting native vegetation. Additionally, these weeds alter the amount of soil moisture or otherwise alter the soil substrate. These opportunistic alien species displace native plant communities. Native plants cannot compete with drought-tolerant annual grasses in many parts of the Colton Dunes ecosystem once these grasses are established. The diversity and abundance of arthropods have been found to be significantly reduced in coastal dune areas containing non-native plants versus native vegetation (Nagano *et al.* 1981; Nagano and Hogue 1982; Slobodchikoff and Doyen 1977). Similar effects are expected within the Colton Dunes ecosystem.

*Conservation Needs*

The recovery plan for the DSF describes actions that would lead to the down-listing and would prevent its extinction (Service 1997). The plan established that the DSF can be considered for reclassification to threatened status when at least eight populations spread across three recovery units (*i.e.*, Colton, Jurupa, and Ontario) are permanently protected with dispersal corridors that are managed to maintain sand supply and sparse native vegetation. All three recovery units are experiencing rapid growth through commercial, industrial, and urban development. According to the plan, populations within the three recovery units must be conserved in order to maintain distribution and genetic diversity. The recovery plan also specifies management and monitoring guidelines and outreach efforts as part of the strategy to reach the conservation goals identified therein.

The survival and recovery of the DSF is dependent on the protection of occupied and restorable habitat. Occupied habitat contains individuals of the subspecies and associated habitat for breeding, feeding, sheltering, and/or habitat used for dispersal. Restorable habitat is an area that contains Delhi soils, not now occupied by DSF, but that could be managed to support recolonization by DSF. To maintain the subspecies' distribution and its genetic diversity throughout its present range, conserved habitat is needed within the three recovery units. Because information is still lacking to determine the amount of habitat needed to sustain viable DSF populations within the recovery units, the recovery plan gives priority to protecting existing populations, including protection of dispersal corridors between populations. High priority is also given to establishing new populations of the DSF (Service 1997).

Another important component of the recovery plan is scientific research into the general biology of this subspecies. A basic understanding of the feeding requirements and dispersal capabilities will be necessary to effectively manage the DSF for conservation purposes. There are also important gaps in our understanding of specific habitat requirements for this subspecies.

The recovery plan also calls for public outreach aimed at instilling an appreciation for the Colton Sand Dune system. The outreach program is particularly important as a means for increasing public knowledge and understanding about this inland dune system and the native plants and animals that inhabit the area, and to accurately describe how economic development can coexist with endangered species conservation.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

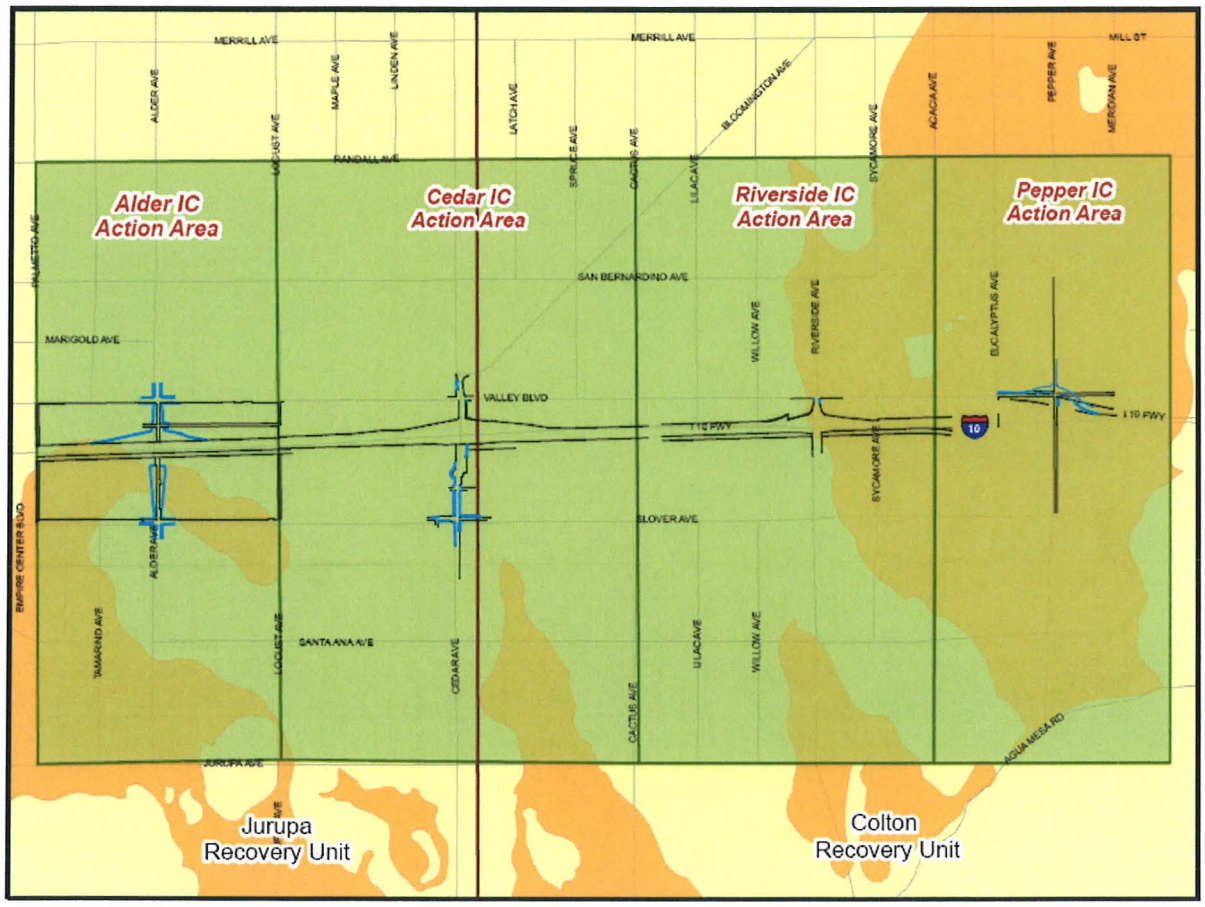
According to 50 CFR § 402.02 pursuant to section 7 of the Act, the "action area" is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area as determined by our agency. Because the action area is a biological determination that must incorporate direct, indirect, and interrelated/interdependent effects to federally listed species and their habitats, it may differ from the scope of analysis used by your agency under the National Environmental Policy Act as defined in Paragraph 7(b) of Appendix B of 33 CFR 325.

The action area for the proposed project, including all of the individual interchanges is depicted in Figure 1 below and includes the area of potential direct and indirect effects, including potential growth inducing effects. The north/south boundaries for the action area correspond roughly to the area served by the I-10 corridor as it runs through the project area. Thus, the northern boundary (Randall Avenue) of the action area for all the intersections is about halfway to the next major corridor to the north (State Route 66), and the southern boundary (Jurupa Avenue) is the southern-most street between I-10 and the next major corridor to the south (State Route 60).

As depicted in Figure 1, the action area for each individual interchange is bound to the east and west by north/south streets that are about halfway to the next interchange. These boundaries represent the service area for each interchange along the I-10. The action area for Alder Avenue is bound to the west by Palmetto Avenue and Locust Avenue to the east. The action area for Cedar Avenue is bound by Locust Avenue to the west and Cactus Avenue to the east. The action area for Riverside is bound by Cactus Avenue to the west and Acacia Avenue to the east. And the action area for Pepper is bound by Acacia Avenue on the west and Hermosa Avenue on the east.

Because the interchanges are all adjacent to one another on I-10, the combined action areas form a large rectangle that is about 2.5 miles north to south and 4.7 miles east to west (about 11.75 square miles). This action area includes the Colton Dunes Conservation Bank, which is the proposed conservation site to offset project-associated effects to DSF.

Figure 1. Project Action Area and Action Areas for Each Interchange




As described in the BA for this project, potential DSF habitat throughout the action area was assessed in 2004 (MBA 2005). The quality of potential DSF habitat was rated on a scale from one to five, with five being the highest quality and one being the lowest. For the purposes of this biological opinion, habitat with a rating of one or two is assumed to be unsuitable for DSF. Habitat with a rating of three is assumed to be recoverable, and habitat with a rating of four or five is assumed to be suitable. Table 2 summarizes the amount of recoverable and suitable DSF habitat in the action area for each interchange.

Table 2. 2004 Recoverable and Suitable DSF Habitat in the Action Area for each Interchange

| Interchange | Recoverable DSF Habitat (acres) | Suitable DSF Habitat (acres) |
|---|---|---|
| Alder Avenue | 25.9 | 26.4 |
| Cedar Avenue | 8.7 | 0 |
| Riverside Avenue | 5.5 | 123.6 |
| Pepper Avenue | 9.5 | 486.3 (includes 150-acre Colton Dunes Conservation Bank) |
| **Total** | **49.6** | **636.3** |

The known DSF populations in the action area for the proposed project are identified in Table 3. For a more detailed description of each population, please refer to the "Status of the Species" section of this document.

Table 3. Known DSF Populations in the Action Area for each Interchange

| Interchange | Known DSF Populations | Recovery Unit |
|---|---|---|
| Alder Avenue | *Santa Ana/Locust*<br>*NW Slover/Locust*<br>*Empire Center*[a,b] | Jurupa |
| Cedar Avenue | None | Jurupa and Colton |
| Riverside Avenue | *Slover/Pepper*[b]<br>*King is Coming*[b]<br>*Angelus Block*[b] | Colton |
| Pepper Avenue | *Slover/Pepper*[b]<br>*King is Coming*[b]<br>*Hospital Preserve* | Colton |

[a] Incidental take of all DSF at this site was authorized on February 5, 2004, through section 7 consultation and issuance of a biological opinion to the Corps of Engineers (FWS-SB-1788.9)
[b]These populations are partially within the action area for the identified intersection

As shown in Figure 1, the I-10 Corridor project passes through the middle of the Colton Recovery Unit and just to the north of the Jurupa Recovery Unit, and the action area includes most of the Colton Recovery Unit and a substantial fraction of the Jurupa Recovery Unit. The action area also includes all or portions of seven of the sixteen known populations of the DSF.

## EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

Indirect effects are those that are caused by the proposed action, are later in time, and are still reasonably certain to occur.

*Direct Effects*

No direct impacts to suitable or recoverable DSF habitat or to individual DSF are anticipated in association with the construction of the interchange improvement projects.

*Indirect Effects*

The primary indirect effect associated with this project is growth inducement associated with improving the transportation infrastructure through this corridor. It is anticipated that as it becomes easier to access the undeveloped land on either side of the freeway, additional businesses and residences will be built.

It is anticipated that future projects in the action area with known DSF populations will be subject to consultation or permitting under the Endangered Species Act, but effects to DSF within the action area will still occur as a result of development in potential DSF habitat without documented DSF populations and degradation of occupied habitat resulting from edge effects (*e.g.*, isolation, introduction of non-native species, trash accumulation, unauthorized access, *etc.*) associated with development that is adjacent to, but not within, known DSF populations.

Because of the large scale of the proposed project (potential growth inducing effects could occur throughout most of the remaining range of the DSF) and the fact that DSF is critically endangered (90 percent of the DSF habitat has been lost, and this project could result in degradation of remaining habitat), growth-inducing effects associated with the proposed project could have a substantial negative effect on the remaining DSF.

The growth inducing and edge effects are anticipated to be greater in areas that have greater amounts of undeveloped habitat remaining. Thus, the effects of the improvement projects will likely be greater in the action area surrounding the Pepper Avenue interchange, which contains 486.3 acres of potential DSF habitat, than in the action area surrounding the Cedar Avenue interchange, which contains only 8.7 acres of potential DSF habitat. However, areas that are permanently conserved and managed, such as the 150-acre Colton Dunes Conservation Bank in action area for the Pepper Avenue interchange, are less likely to be impacted by surrounding growth.

In addition, the effects of creating a new interchange at Alder Avenue are anticipated to be greater than the effects of improving existing interchanges at Cedar, Riverside, and Pepper avenues because the surrounding area and undeveloped lands will now be directly accessible from the freeway.
For the purposes of calculating the amount of acreage to be conserved in association with each interchange project, the amount of suitable DSF habitat in the action areas of Cedar, Riverside,

and Pepper avenues was multiplied by 5 percent, and the amount of recoverable DSF habitat was multiplied by 2.5 percent. Because the new interchange at Alder is anticipated to have greater indirect effects than the interchange improvements at Cedar, Riverside, and Pepper, the amount of suitable habitat was multiplied by 15 percent, and the amount of recoverable habitat was multiplied by 7.5 percent. Areas that are permanently conserved and managed for the benefit of the DSF, such as the Colton Dunes Conservation Bank, were excluded from the calculation because they are not anticipated to be developed, and the ongoing management is anticipated to limit the negative effects of surrounding development (*e.g.*, trespassing, trash dumping, introduction of non-native weeds, *etc.*). Note that because of the difficulties associated with accurately predicting the extent of indirect impacts associated with the I-10 corridor project, the acreage of habitat to be conserved in association with each interchange project is not designed to be a precise reflection of the acreage of DSF habitat that will be indirectly impacted. Rather, it is an approach developed in coordination with FHWA and the project proponents that is intended to provide meaningful conservation for DSF while facilitating the transportation infrastructure and associated growth. The amount of habitat to be conserved is based on calculations provided in the BA and will not be re-calculated at the time of project construction.

There is a small chance that the interchange improvement project will increase the likelihood of DSF mortality by vehicle strikes, but since three of the proposed projects involve improvements to interchanges that are already heavily utilized, and since the potential DSF habitat in the action area for the Alder Avenue interchange is not in the immediate vicinity of the proposed improvements, the likelihood of such an increase is not anticipated to be biologically significant.

*Beneficial Effects*

The 29.5 acres of conservation associated with the proposed projects will contribute to the creation of a large core of conserved habitat in the last remaining large, undeveloped area of suitable DSF habitat remaining. Since a total of 112 acres of DSF habitat have been conserved thus far (not including the Colton Dunes Conservation Bank), the conservation of 29.5 acres of DSF habitat associated with the proposed project represents a substantial increase in the amount of habitat conserved for the DSF.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

We are aware of one non-federal project in the action area that is reasonably certain to occur and is anticipated to impact DSF. This project is the relocation and improvement of the Valley Boulevard/Pepper Avenue intersection, and is the subject of a low-effect Habitat Conservation Plan that is nearing completion. The relocation and improvement of the Valley Boulevard/

Pepper Avenue intersection will result in relatively small-scale impacts (1.84 acres of estimated impact) to potential DSF habitat, which will be mitigated through conservation of a nearby parcel or conservation of land in the Colton Dunes Conservation Bank.

The City of Rialto has submitted the first draft of a Habitat Conservation Plan for development throughout the city, and Wal-Mart has submitted the first draft of a Habitat Conservation Plan for development of a Wal-Mart Supercenter in Rialto. However, both of these projects are early in the review process, and, therefore, we do not have enough information to include them in the analysis of cumulative effects.

## CONCLUSION

We anticipate that the proposed action will indirectly affect the DSF as described in the analysis above. After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the DSF. We reached this conclusion because:

1. Despite the potential for growth inducing effects over a wide area associated with interchange improvements throughout the I-10 corridor, there are no direct impacts to DSF or potential habitat associated with this project. Future projects in the action area will be subject to review (and consultation or permitting if necessary) under the Act.

2. The 29.5 acres of conservation associated with the proposed projects will contribute to the creation of a large core of conserved habitat in the last remaining large, undeveloped area of suitable DSF habitat remaining, substantially increasing the total amount of DSF habitat conserved throughout its range.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm is further defined by us to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by us as an action that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2) of the Act, such incidental take is not considered a prohibited taking under the Act, provided that such taking is in compliance with this incidental take statement.

The measures described below are nondiscretionary and must be implemented by the FHWA or applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity that is covered by this incidental take statement. If the FHWA fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. To monitor the impacts of incidental take, the FHWA or the applicant must report the progress of the action and its impact on the species to our agency as specified in the incidental take statement [50 CFR § 402.14(I)(3)].

AMOUNT OR EXTENT OF TAKE

No quantifiable take of DSF or its habitat is anticipated in association with the proposed project.

EFFECT OF THE TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to result in jeopardy to the DSF.

REASONABLE AND PRUDENT MEASURE

No additional Reasonable and Prudent Measures beyond the conservation measures committed to by the FHWA and the project proponents as part of the proposed action have been identified to further minimize take of DSF.

TERMS AND CONDITIONS

No additional terms and conditions are necessary because no additional Reasonable and Prudent Measure have been identified.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, help implement recovery plans, or to develop information. We have not identified any additional conservation recommendations that should be implemented in association with the proposed project.

**REINITIATION NOTICE**

This concludes formal consultation on the proposed action outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) new information reveals effects of the proposed action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 2) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion or; 3) a new species is listed or critical habitat is designated that may be affected by the proposed action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion, then please contact Jonathan Snyder of this office at (760) 431-9440 x307.

Sincerely,

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# M3: Informal Section 7 Consultation

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Palm Springs Fish and Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer To:
FWS-SB-08B0758-17I0449

March 24 2017
*Sent by email*

Craig Wentworth
Senior Enviromental Planner
California Department of Transportation
District 8, Division of Environmental Planning
464 West 8th Street
San Bernardino, California 92401

Re: Informal Section 7 Consultation for Interstate 10 (I-10) Corridor Project, Los Angeles and San Bernardino Counties, California

Dear Mr. Wentworth:

We have reviewed your correspondence dated March 7, 2017, which we received on March 9, 2017, regarding the above referenced I-10 Corridor Project (Project). The Project is receiving Federal funding through the Federal Highway Administration (FHWA). The California Department of Transportation (Caltrans) is acting as the designated non-Federal representative for FHWA for this consultation in accordance with correspondence from the FHWA California Division Office, to the Caltrans Director, dated April 24, 2002, pursuant to Section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq*.). Caltrans and the San Bernardino County Transportation Authority (SBCTA) are the Project proponents.

Caltrans proposes to provide two Express Lanes in both directions on a 33-mile-long stretch of Interstate 10 (I-10) from the Los Angeles/San Bernardino (LA/SB) County line (Post Miles 44.9/48.3) to Ford Street in San Bernardino County (Post Miles 0.0/R37.0). Project construction is planned to begin in 2019 and opening for use is anticipated by 2024. The Project limits, including transition areas, extend from approximately 0.4 miles west of White Avenue in the city of Pomona to Live Oak Canyon Road in the city of Yucaipa, California. Construction staging areas will be located within existing rights-of-way (ROW) at interchange locations. Improvements will also be undertaken at multiple interchanges. Impacts to listed species could potentially occur at the I -10 Bridge crossing the Santa Ana River in Colton, California, near the Interstate 215 (I-215) interchange; Interstate 15 interchange (I-15); and the Pepper Avenue, Milliken Avenue, and Haven Avenue interchanges; and along the I-10 corridor generally between Rancho Avenue in Colton and Archibald Avenue in Ontario, California. Improvement of the Pepper Avenue interchange is being addressed in a formal consultation. The formal consultation reinitiation letter is dated December 28, 2016. Caltrans' authorization to act on behalf of FHWA for formal Section 7 consultations expired on January 1, 2017.

Construction activities at the Santa Ana River will involve widening the two bridges (54-0292R and 54-0292L) to carry traffic over the river, and widening the pier walls at the Santa Ana River to support the bridge widening. Construction activities will be immediately adjacent to the existing I-10

bridge and remain within the concrete-lined section of the river for approximately 2,250 feet south and 300 feet north of the existing I-10 Bridge. Construction activities at other locations along the ProjectROW include, building one to two additional lanes in each direction, as well as the construction of auxiliary lanes, shoulders, median barriers, soundwalls, retaining walls, drainage facilities, and improvements to bridges and ramps. The Project proponent has delineated and surveyed applicable portions of a biological study area (BSA) along the entire 33-mile long segment of I-10 in San Bernardino County, California between the cities of Montclair and Redlands, California. The BSA is comprised of Caltrans ROW's, anticipated temporary construction easements, proposed construction staging areas, and areas within a 50-foot buffer immediately adjacent to the Caltrans ROW and staging areas.

We have reviewed the information provided within the Environmental Impact Report/Environmental Impact Statement (2017), the Natural Environmental Study (December 2015), and your informal initiation letter. The US Fish and Wildlife Service (Service) concurs with your determination that the Project as described is not likely to adversely affect the Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*, DSF), least Bell's vireo (*Vireo bellii pusillus*, LBV), southwestern willow flycatcher (*Empidonax traillii extimus*, SWFL) or its designated critical habitat, Santa Ana sucker (*Catostomus santaanae*, SAS) or its designated critical habitat, and the San Bernardino kangaroo rat (*Dipodomys merriami parvus*, SBKR) or its designated critical habitat, based on the results of focused surveys and provided conservation measures. We have determined that there will be no effect on LBV critical habitat, due to the fact designated critical habitat for this subspecies begins approximately 10-miles downstream of the Project footprint.

Protocol presence/absence surveys were conducted in suitable habitat for DSF in July and August of 2015 & 2016 within the existing and proposed I-10 ROW, whichever was larger. Suitable habitat was defined as wherever Delhi series soils are present within the range of DSF. DSF were detected within the footprint of the proposed Pepper Avenue interchange improvements. Project effects to DSF are being addressed in a reinitiation of formal consultation (FWS-SB-4339.5, April 2006). No DSF were found on the remainder of the Project limits, within the north and south shoulder areas or other interchange locations with suitable habitat (Haven Avenue, Milliken Avenue, and I-15). All areas of the I-10 corridor containing Delhi soils were surveyed: between Archibald and Etiwanda Avenues in Ontario, California; between Sierra Avenue in Fontana and Alder Avenue in Bloomington; and between Riverside Avenue in Rialto and Rancho Avenue in Colton, California. The majority of suitable habitat occurring within the Caltrans ROW/project limits is disturbed and considered not restorable due to the proximity of continuous freeway traffic and the narrow linear distributions of habitat patches. Conservation measure 1 (below) will avoid any potential impacts to DSF resulting from the widening of the Interstate and the improvement of the interchanges at Haven Avenue, Milliken Avenue, and I-15. Critical habitat has not been designated for DSF.

Presence/absence surveys were conducted for LBV in April, May, June, and July of 2013; near the I-10 and I-215 interchange at the Santa Ana River crossing. No LBV were observed within the BSA, however, a breeding male was repeatedly observed in dense riparian vegetation more than 500-feet outside of the Project footprint; along with BSA, and juvenile LBV within the same habitat later in the season. Additional surveys were performed at the Service's request in July and August of 2016; LBV were again heard in the mature riparian vegetation more than 500-feet outside of the Project footprint and BSA, across South "E" Street. Conservation measures 1 and 2 (below) will avoid any

indirect effects to LBV occurring within the proximity of the Project footprint. The Project footprint itself lacks suitable LBV riparian habitat.

Focused presence/absence surveys were conducted for SWFL in May, June, and July of 2013 near the I-10 and I-215 interchange at the Santa Ana River crossing. One to two willow flycatchers (*Empidonax traillii*) were located on two dates within suitable riparian habitat in the survey area, but approximately 0.25-miles upstream of construction activities and outside the BSA. Survey efforts did not confirm breeding status of SWFL. The individuals that were observed are considered to be migrant willow flycatchers, not the listed subspecies, as they were not detected during the June 25-July 17 survey period when SWFL nest in the region. Conservation measures 1 and 2 (below) will avoid any indirect effects to SWFL potentially occurring within the proximity of the Project footprint. The proposed Project will temporarily impact 0.59-acres of designated critical habitat for SWFL within the Santa Ana River. However, there are not dense stands of riparian vegetation within the Project footprint or BSA, which is a physical and biological feature (PBF) described within the 2011 critical habitat designation and is required to sustain the species' life-history processes. Furthermore, the temporary impacts will be associated with construction activities within the concrete-lined portion of the river only. Marginally suitable SWFL habitat begins just outside the concrete portion of the Santa Ana River where I-10 crosses and construction activities would occur. No willow flycatchers were documented in this marginal habitat during surveys and this habitat will be delineated and avoided as described in conservation measure 1.

The Service did not request surveys for SAS, as the nearest documented SAS occurrence is approximately 2.5-miles downstream of the Project footprint, within the Santa Ana River (CFWO GIS Database). Implementation of conservation measures 1, and 3 through 15 (below) will avoid any potential negative effects to SAS downstream of the Project. The proposed Project will temporarily impact 0.59-acres and permanently impact less than 0.01-acres of designated critical habitat for SAS. However, the critical habitat occurring within the Project footprint lacks sufficient PBFs, such as proper substrate, to sustain the species' life history processes; the proposed impacts will occur within the concrete-lined portion of the Santa Ana River only. The conservation measures pertaining to water quality listed below will avoid any potential impacts to SAS critical habitat downstream.

The Service did not request surveys for SBKR, as the nearest documented occurrence of SBKR in recent years is approximately 2 miles upstream of the Project footprint (CFWO GIS Database). Designated SBKR critical habitat is approximately 500 feet upstream of the BSA at the I-10 and I-215 interchange, and outside the Project footprint. Conservation measures 1 and 16 will avoid any potential indirect effects to SBKR or its critical habitat.

The following measures have been incorporated into the proposed action to avoid effects to DSF, LBV, SWFL, SAS, and SBKR and their critical habitat:

CM 1. SBCTA's design-build contractor will coordinate with the qualified biologist to delineate all environmentally sensitive areas (ESAs) within the Project footprint and immediately surrounding areas in the Project specifications. ESAs include riparian vegetation communities and Riversidean sage scrub vegetation within the Santa Ana River and Warm Creek channel, as well as Delhi soils (potential DSF habitat) that are not identified as temporarily or permanently impacted in the environmental document.

Prior to clearing vegetation or construction within or adjacent to ESAs, the contractor will install highly visible barriers (e.g. orange construction fencing) under the direction of the qualified biologist, adjacent to the Project footprint to designate ESAs to be preserved in place. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner to prevent accidental damage to nearby ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within the ESAs. Silt fence barriers will be installed at the ESA boundaries to prevent accidental deposition of fill material in areas where vegetation is adjacent to planned grading activities. The ESA fencing will conform to the provisions of Section 14-1.03 "Type ESA Temporary Fence" of the California Department of Transportation's 2010 Standard Specifications and Special Provisions. A qualified biologist will supervise the placement of ESA fencing.

CM 2. To avoid effects to nesting birds, the SBCTA Resident Engineer will require the contractor to conduct any native or exotic vegetation removal or tree-trimming activities outside of the nesting bird season (i.e., February 15 through August 31). If vegetation clearing or the start of construction in a previously undisturbed area is necessary during the nesting season, SBCTA's resident engineer will require the contractor to have a qualified biologist conduct a preconstruction survey within 300 feet of construction areas no more than three days prior to construction at the location to identify the locations of nests, if any. If any occupied nest is discovered, the biologist will monitor the nests on a weekly basis when new equipment is utilized or when night work will be performed to ensure lighting is shielded and directed away from the nest. A qualified biologist is one that has previously surveyed for nesting bird species within southern California. Should nesting birds be found, an exclusionary buffer of 300-feet will be established by the qualified biologist around each nest site. The buffer will be clearly marked in the field by construction personnel under guidance of the contractor's qualified biologist, and construction or clearing will not be conducted within this zone until the qualified biologist determines that the young have fledged or the nest is no longer active. If more than three days lapse between the preconstruction survey and construction start date at that location, the survey will be reconducted.

CM 3. The design engineer will coordinate with the qualified biologist to delineate all ESAs within the Project footprint and immediately surrounding areas in the Project specifications. ESAs will include the Santa Ana River, Warm Creek Channel, and other Waters of the U.S. and Waters of the State that are not identified as temporarily or permanently impacted in the environmental document.

CM 4. A Storm Water Pollution Prevention Plan will be prepared and implemented for the Project, which will include all applicable water pollution control measures for the Project. In addition, construction activities within the Santa Ana River will be designed and conducted to maintain downstream flow conditions. All construction activities will be effectively isolated from water flows to the greatest extent feasible. This may be accomplished by working in the dry season or dewatering the work area in the wet

season. When work in standing or flowing water is required, structures for isolating the in-water work area and/or diverting the water flow must not be removed until all disturbed areas are cleaned and stabilized. The diverted water flow must not be contaminated by construction activities. Structures used to isolate the in-water work area and/or diverting the water flow (e.g. coffer dam, geotextile silt curtain) must not be removed until all disturbed areas are stabilized.

CM 5. Positive drainage will be provided during construction and the Project will refrain from filling designated floodplains.

CM 6. Recommended best management practices (BMPs) will be implemented during construction as identified in the Caltrans Storm Water Quality Handbooks.

CM 7. Erosion control and water quality protection will be implemented during in-river construction and post-construction as identified in the Caltrans Storm Water Quality Handbooks.

CM 8. Construction activities will be limited between October and May to those actions that can adequately withstand high flows and entrainment of construction materials. The Contractor shall prepare a Rain Event Action Plan and discuss high flows mitigation.

CM 9. Adequate conveyance capacity will be provided at bridge crossings to ensure no net increase in velocity. A hydraulic analysis shall be completed to assess existing and post-hydraulic conditions.

CM 10. Project will comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities, Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002, as well as implementation of the BMPs specified in the Caltrans Storm Water Management Plan.

CM 11. If dewatering is expected, the contractor shall fully conform to the requirements specified in the Santa Ana Regional Water Quality Control Board's dewatering permit Order R8-2005-0041 (NPDES No. CAG998001).

CM 12. The Project will conform to the requirements of the Caltrans Statewide NPDES Storm Water Permit, Order No. 2012-0011-DWQ, NPDES No. CAS000003, adopted by the State Water Resources Control Board on September 19, 2012, and any subsequent permit in effect at the time of Project operation.

CM 13. The Project will comply with San Bernardino County conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution associated with street and road construction, as appropriate. These conditions and approvals are referenced in the Waste Discharge Requirements associated with the municipal separate storm sewer systems (MS4) permits per Order No. R8-2010-0036

(NPDES No. CAS618036) for the County of San Bernardino and the incorporated cities of the County of San Bernardino.

CM 14. Slopes steeper than 4:1 will require an Erosion Control Plan approved by the Caltrans Landscape Architect.

CM 15. To avoid potential downstream impacts to SAS and its habitat, silt fencing will be installed and the requirements of measure conservation measure CM 4 will be implemented prior to construction within the Santa Ana River and Warm Creek Channel.

CM 16. For night lighting during construction, wildlife-friendly limited wavelength amber LED roadway lighting fixtures will be used. Night lighting during construction will be directed away from SBKR critical habitat within the Sana Ana River. A qualified biological monitor will be present to inspect onsite lighting prior to initiating nighttime construction activities.

If the Project is constructed as described and the above conservation measures are implemented, the Service concurs that the proposed I-10 Corridor Project, not including improvement to the Pepper Avenue interchange, is not likely to adversely affect federally listed species or their designated critical habitat. Therefore, the interagency consultation requirements of section7 of the Act have been satisfied. Although our concurrence ends informal consultation, obligations under section 7 of the Act will be reconsidered if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered, or this action is subsequently modified in a manner that was not considered in this assessment.Thank you for your coordination on this Project. If you have any questions regarding this letter, please contact Rebecca Gordon of this office at (760) 322-2070, extension 416.

Sincerely,

KARIN CLEARY-ROSE

Digitally signed by KARIN CLEARY-ROSE
Date: 2017.03.24 15:09:01 -07'00'

for
Kennon A. Corey
Assistant Field Supervisor